Microbial interference in fruits: promoting fruit resistance against pathogenic proliferation

Ramos B.F., Miller F.A., Brandão T.R.S. and Silva C.L.M.

The demand for fresh salad vegetables and fruit has increased in recent years. This foods are minimal processed and can be a vehicle of innumerous foodborne pathogens. Rising consumption levels have resulted in a higher frequency of outbreaks of foodborne illness associated with raw produce.

Pathogenic bacteria of concern include *Listeria monocytogenes, Escherichia coli* O157:H7 and *Salmonella*. The *L. monocytogenes* bacterium is of particular importance as it can cause humans listeriosis. Important characteristics of *L.monocytogenes* contributing to foodborne transmission, are its ability to grow at refrigeration temperatures and in environments of reduced water-activity, measures commonly used to control the growth of pathogens in foods.

In attempt to increase fruits and vegetables self life and safety, several technologies are widely used to inactivate/remove the microorganisms responsible for their contamination and deterioration. These treatments affect all the microbiota and may promote food susceptibility to pathogenic proliferation, as a consequence of microbial interference reduction. This interference includes the ability of endogen microbiota to act as antagonist, inhibitor or destructor of certain pathogenic bacteria. An alternative approach is the inactivation/inhibition of those microorganisms by a biological control.

The objective of this work was to assess the interaction between strawberry and tomato endogen bacteria, and *Listeria innocua* (used as an indicator of the pathogenic specie, *L. monocytogenes*).